InsightMath Texas

Comparing and Measuring Length

Family Guide | Grade 1 | Unit 3

Your student is exploring how comparing and measuring length helps to describe and analyze objects and their relationships to other objects.

Key Math Ideas

Objects can be compared and described using different attributes. In this unit, students explore the attribute of length. The length of objects can be compared directly (physically aligning two objects to determine which is longer) or indirectly (by comparing both objects to a third object).

Students also measure the length of objects using nonstandard units of measurement, such as cubes, sticky notes, or markers. Students can now justify why one object is longer or shorter than another object based on length measurements that use the same nonstandard unit of measurement. For example, a crayon that is 4 cubes long compared to a pencil that is 7 cubes long. In 2nd Grade, students will expand their length measurement understanding to explore standard units of measurement, such as inches and centimeters.

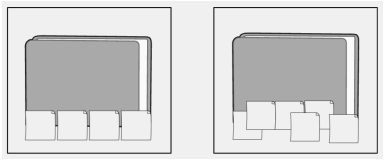
Direct comparison of objects to each other

Indirect comparison of objects to each other by comparing each to the pencil

Measuring length using nonstandard units, which tells that the shell is about 6 sticky notes long

→ In the first half of the unit, your student will learn to

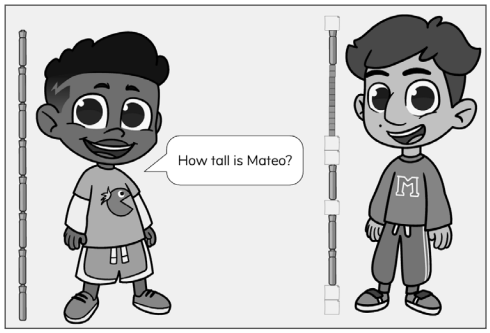
- compare and order the lengths of up to three objects;
- use words such as “longer than” or “shorter than” when comparing length;
- explain that the length of objects remains the same even when the object is moved.



The left shows measuring length with gaps and the other with overlaps, neither of which give a precise length measurement.

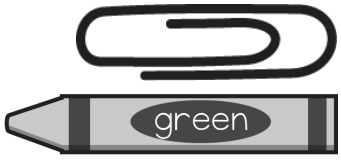
→ In the second half of the unit, your student will learn to

- measure the length of objects using nonstandard units such as cubes, sticky notes, markers or other tools, without gaps or overlaps;
- describe the quantity and unit when measuring length, such as “3 cubes long” or “4 tiles tall”;
- use the same units of measurements to compare the length of objects, as shown in the visual to the right.



Helpful Hint

As your student practices measuring and comparing objects, encourage them to use comparing language, such as “The green book is longer than the blue book” or “The paper clip is shorter than the crayon.” Using this language helps prepare your student for future work with measurement. When your student says “bigger” and “smaller” to describe length comparisons, try rephrasing as “longer” and “shorter.”



Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ At the beginning of the unit:

- Which object is longer? Which is shorter? How do you know?
- What happens if I move the objects? Does it change which one is longer or shorter?
- How can you put these three objects in order from shortest to longest?

→ Later in the unit:

- How can you measure the length of this object?
- What can you use to measure the length of the object?
- Can I compare two objects if I measure one with a block and the other with a marker? Why or why not?

If...	Try...
your student is not measuring accurately because the nonstandard unit they are measuring with, such as sticky notes or blocks, are overlapping or have gaps...	asking your student to point with their finger to show where the last unit (i.e. sticky note) ends and recognize that this is where the new unit should be placed.

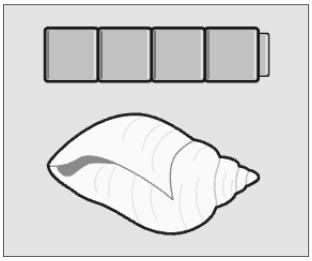
Student Strengths Spotlight

We learn from our mistakes. When learning strategies for measuring length, students do not give up when they make mistakes; instead, they learn from their errors.

We model our thinking. Students share ideas about how to measure and compare the lengths of different objects.

Try This Together!

- **Compare While Organizing.** Find items around your home that you and your student can compare measurements of and order by length while organizing. For example, you can compare heights of books and then order and organize your books from shortest to tallest.
- **Take a Nature Walk!** Collect outdoor items to measure, like sticks, leaves, or rocks. After collecting the items, choose a nonstandard unit of measurement, like blocks or sticky notes, to measure the items. Your student can also practice using comparing language, such as "This rock is shorter than this stick."



- **Play a Game!** Choose a household item and ask your student to use a nonstandard unit of measurement that you have in your home, like blocks, to estimate the length of the item. Then, find the length and compare it to the estimate. For example, find a favorite toy and prompt your student to estimate its length by asking, "How many blocks long do you think this toy is?" Then, switch roles, with you using the blocks to estimate the length of an item chosen by your student. Finally, measure each item using the blocks to find the actual length. The person whose estimate is closest to the actual length wins the game!